



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Anti-DNA/RNA Damage Antibody [15A3]

Mouse Anti- DNA/RNA Damage Monoclonal IgG2b  
Catalog No. SMC-155



Discovery through partnership | Excellence through quality

## Overview

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### Product Name

DNA/RNA Damage Antibody

### Description

Mouse Anti- DNA/RNA Damage Monoclonal IgG2b

### Species Reactivity

Species Independent

### Applications

IHC, ICC/IF, ELISA, DB

### Antibody Dilution

IHC (1:1000); optimal dilutions for assays should be determined by the user.

### Host Species

Mouse

### Immunogen

8-hydroxy-guanosine-BSA and casein conjugates

### Concentration

1 mg/ml

### Conjugates

Alkaline Phosphatase, APC, ATTO 390, ATTO 488, ATTO 565, ATTO 594, ATTO 633, ATTO 655, ATTO 680, ATTO 700, Biotin, FITC, HRP, PE/ATTO 594, PerCP, RPE, Streptavidin, Unconjugated

## Properties

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### Storage Buffer

PBS, 50% glycerol, 0.09% sodium azide

### Storage Temperature

-20°C

### Shipping Temperature

Blue Ice or 4°C

### Purification

Protein G Purified

### Clonality

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Monoclonal

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**Clone Number**

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15A3

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**Isotype**

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IgG2b

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**Specificity**

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Recognizes markers of oxidative damage to DNA (8-hydroxy-2-deoxyguanosine, 8-hydroxyguanine and 8-hydroxyguanosine).

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**Cite This Product**

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Mouse Anti- DNA Damage Monoclonal, Clone 15A3 (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SMC-155)

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## Biological Description

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**Alternative Names**

8-Hydroxy Guanine Antibody, 8-OH-dG Antibody, 8OHG Antibody, 8OG Antibody, 8 hydroxyguanine Antibody, 8 hydroxy 2 deoxyguanosine Antibody, 8 hydroxyguanosine Antibody, 8 OHG Antibody, 8-OHG Antibody, 8OHdG Antibody

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**Research Areas**

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Cancer, Cell Signaling, Oxidation, Oxidative Stress, Post-translational Modifications

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**Scientific Background**

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DNA or RNA damage is due to environmental factors and normal metabolic processes inside the cell, that then hinder the ability of the cell to carry out its functions. There are four main types of DNA due to endogenous cellular processes and they are oxidation, alkylation, hydrolysis and mismatch of the bases. During the oxidation of bases, highly reactive chemical entities collectively known as RONS, occurs. RONS stands for reactive oxygen and nitrogen species and includes nitric oxide, superoxide, hydroxyl radical, hydrogen peroxide and peroxytrite. Numerous studies have shown that RONS causes a variety of issues including DNA damage(1). 8-hydroxyguanine, 8-hydroxy-2-deoxyguanosine and 8- hydroxyguanosine are all RNA and DNA markers of oxidative damage. 8-hydroxy-2-guanosine is produced by reactive oxygen and nitrogen species including hydroxyl radical and peroxytrite. Specifically its high biological relevance is due to its ability to induce G to T transversions, which is one of the most frequent somatic mutations (2). 8-hydroxy-guanine has been the most frequently studied type of DNA base damage, with studies in diabetes, and cancer. Base modifications of this type arise from radical-induced hydroxylation and cleavage reactions of the purine ring (3, 4). And finally, 8-hydroxy-guanosine, like 8-hydroxy-2-guanosine, induces a mutagenic transversion of G to T in DNA. Its role has specifically been tested in the development of diabetes, hypertension and strokes (5, 6, and 7).

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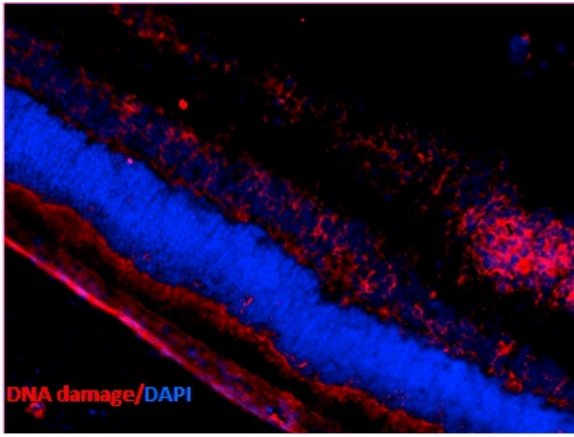
**References**

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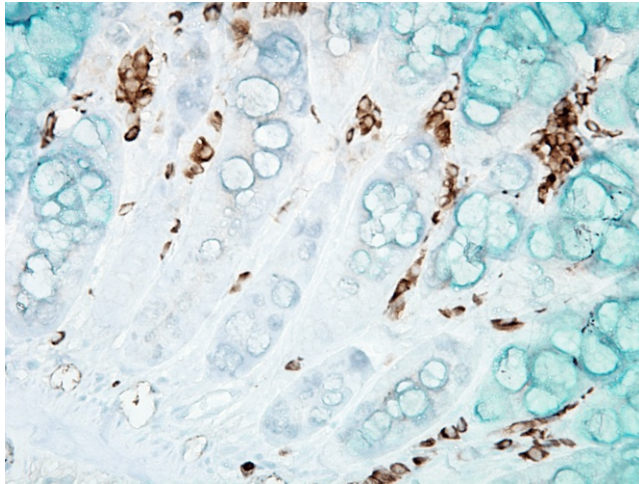
1. Kim H.W., Murakami A., Williams M.V., and Ohigashi H. (2003) Carcinogenesis 24(2): 235-241.
  2. Pilger A. and Rudiger H.W. (2006) Int Arch Occup Environ Health. 80(1): 1-15.
  3. Malins D.C. and Haimanot R. (1991) Cancer Res. 51(19): 5430-5432.
  4. Kvam E. and Tyrrell R.M. (1997) Carcinogenesis 18(11): 2281-2283.
  5. Kowluru R.A., Atasi L., and Ho Y.S. (2006) Invest Ophthalmol Vis Sci 47(4): 1594-9.
  6. Bowers R. et al. (2004) Am J Respir Crit Care Med. 169(6): 764-9.
  7. Cui J., Holmes E.H., Greene T.G., and Liu P.K. (2000) Faseb J. 14(7): 955-67.
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## Product Images

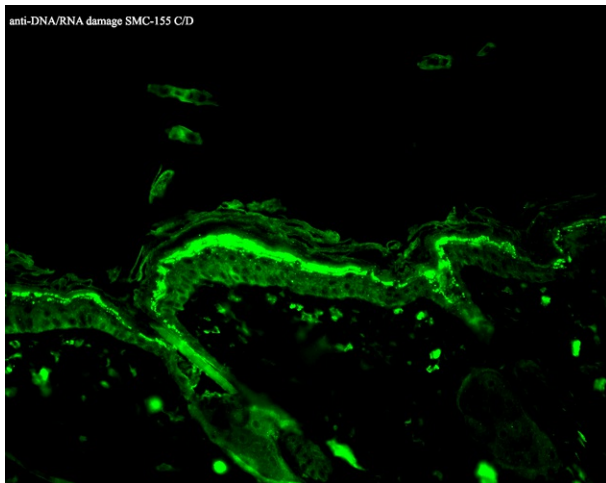
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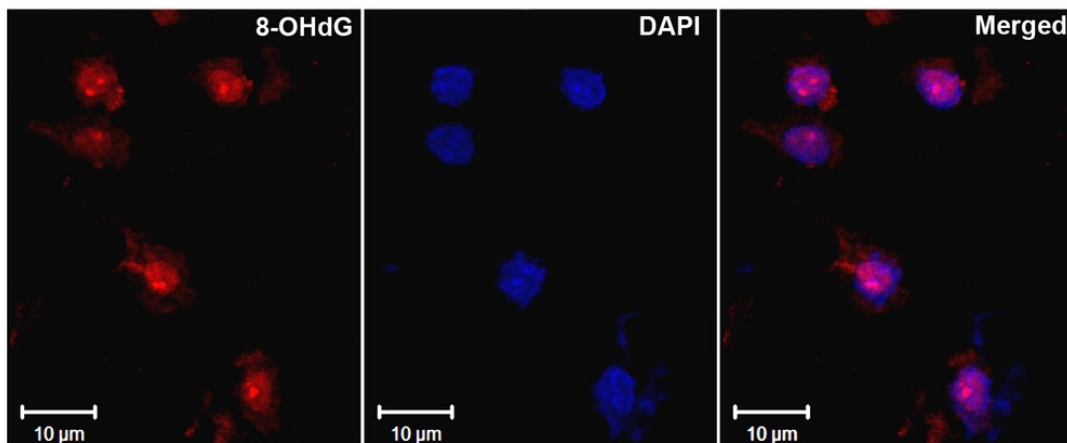
Immunohistochemistry analysis using Mouse Anti-DNA Damage Monoclonal Antibody, Clone 15A3 (SMC-155). Tissue: Retinal Injury Model. Species: Mouse. Primary Antibody: Mouse Anti-DNA Damage Monoclonal Antibody (SMC-155) at 1:1000. Secondary Antibody: Alexa Fluor 594 Goat Anti-Mouse (red). Courtesy of: Dr. Rajashekhar Gangaraju, University of Indiana, Department of Ophthalmology, Eugene and Marilyn Glick Eye Institute.



Immunohistochemistry analysis using Mouse Anti-DNA Damage Monoclonal Antibody, Clone 15A3 (SMC-155). Tissue: inflamed colon. Species: Mouse. Fixation: Formalin. Primary Antibody: Mouse Anti-DNA Damage Monoclonal Antibody (SMC-155) at 1:1000000 for 12 hours at 4°C. Secondary Antibody: Biotin Goat Anti-Mouse at 1:2000 for 1 hour at RT. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain at 200 µl for 2 minutes at RT. Magnification: 40x.



Immunohistochemistry analysis using Mouse Anti-DNA Damage Monoclonal Antibody, Clone 15A3 (SMC-155). Tissue: backskin. Species: Mouse. Fixation: Bouin's Fixative and paraffin-embedded. Primary Antibody: Mouse Anti-DNA Damage Monoclonal Antibody (SMC-155) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT.



Immunohistochemistry analysis using Mouse Anti-DNA Damage Monoclonal Antibody, Clone 15A3 (SMC-155). Tissue: Ischemic fresh brain tissue. Species: Rat. Primary Antibody: Mouse Anti-DNA Damage Monoclonal Antibody (SMC-155) at 1:1000 for 16 hours at RT. Secondary Antibody: Alexa Fluor 546 Goat Anti-mouse (Red) at 1:500 for 1 hour at RT.

Localization: Cerebral Cortex. Courtesy of: Dr. Yi Yang, U. New Mexico.

## Product Citations (9)

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### Immunohistochemistry

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**Loss of angiotensin II receptor expression in dopamine neurons in Parkinsons disease correlates with pathological progression and is accompanied by increases in Nox4- and 8-OH guanosine-related nucleic acid oxidation and caspase-3 activation.**

Zawada, W.M. et al. (2015) Acta Neuropathol Commun. 3(1):9.

**PubMed ID:** 25645462 **Reactivity:** Human **Applications:** Immunohistochemistry

**Epilepsy: neuroinflammation, neurodegeneration, and APOE genotype.**

Aboud, O., Mrak R.E., Boop F.A., and Griffin W.S.T. (2013) Acta Neuropathol Commun. 1(1):41.

**PubMed ID:** 24252240 **Reactivity:** Human **Applications:** Immunohistochemistry

### Immunocytochemistry/Immunofluorescence

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**In vivo oxidative stress alters thiol redox status of peroxiredoxin 1 and 6 and impairs rat sperm quality.**

Liu, Y. and O'Flaherty, C. (2016) Asian J Androl. [Epub ahead of print]

**PubMed ID:** 26823067 **Reactivity:** Rat **Applications:** Immunocytochemistry/Immunofluorescence

**Neutrophil extracellular traps enriched in oxidized mitochondrial DNA are interferogenic and contribute to lupus-like disease.**

Lood, C. et al. (2016) Nat Med. [Epub ahead of print]

**PubMed ID:** 26779811 **Reactivity:** Various species **Applications:** Immunocytochemistry/Immunofluorescence

**Neutrophil extracellular traps enriched in oxidized mitochondrial DNA are interferogenic and contribute to lupus-like disease.**

Lood, C. et al. (2016) Nat Med. [Epub ahead of print]

**PubMed ID:** 26779811 **Reactivity:** Various species **Applications:** Immunocytochemistry/Immunofluorescence

**Neuroprotective effect of sulforaphane against methylglyoxal cytotoxicity.**

Angeloni, C. et al. (2015) Chem Res Toxicol. 28(6):1234-45.

**PubMed ID:** 25933243 **Reactivity:** Human **Applications:** Immunocytochemistry/Immunofluorescence

**Advancing age increases sperm chromatin damage and impairs fertility in peroxiredoxin 6 null mice.**

Ozkosem, B., Feinstein, S.I., Fisher, A.B. and O'Flaherty, C. (2015) Redox Biol. 5:15-23.

**PubMed ID:** 25796034   **Reactivity:** Mouse   **Applications:** Immunocytochemistry/Immunofluorescence

**Absence of PEROXIREDOXIN 6 is Associated with Low Sperm Chromatin Quality and Subfertility in Mice Challenged with Oxidative Stress.**

Ozkosem, B. and O'Flaherty, C. (2013) figshare.

**PubMed ID:**   **Reactivity:** Mouse   **Applications:** Immunocytochemistry/Immunofluorescence

## Other Citations

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**Disruption of redox homeostasis leads to oxidative DNA damage in spermatocytes of Wolbachia-infected Drosophila simulans.**

Brennan, L.J., Haukedal, J.A., Earle, J.C., Keddie, B. and Harris, H.L. (2012) *Insect Mol Biol.* 21 (5): 510-520.

**PubMed ID:** 22831171   **Reactivity:** Aedes albopictus   **Applications:** Dot Blot

## Reviews

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Based on validation through cited publications.



**StressMarq Biosciences**

June 14, 2016: